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**NOV 27 2005**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Perriann M. Holden	)	Art Unit: 3765
	)	
Serial No.: 10,695,223	)	Attorney
	)	Docket No.: 810101-3
Filed: October 28, 2003	)	
	)	Confirmation No.: 4944
Title: Protective Attachment	)	
	)	
	)	

**RULE 132 DECLARATION**

Mail Stop: Non-Fee Amendment  
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Attention: **Alissa Hoey**  
Examiner  
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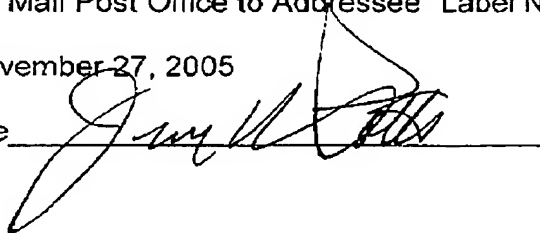
This declaration is made in support of the RCE Amendment filed herewith on November 27, 2005:

**CERTIFICATE OF TRANSMITTAL UNDER 37 C.F.R. § 1.8 (a)**

I the undersigned, JERRY R. POTTS hereby certified that, on the date shown below, this correspondence is being facsimile transmitted to the United States Patent and Trademark Office or deposited with the United States Postal Service, addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 as "Express Mail Post Office to Addressee" Label No: ED 960924515 US.

Date: November 27, 2005

Signature



I, Perriann M. Holden, do hereby declare that:

1. I am the sole inventor of the subject matter claimed in the above-identified patent.
2. In developing the claimed subject, I contacted 3M Company to purchase various types of adhesive transfer tapes that could possibly work for my invention. More specifically I was seeking an adhesive transfer tape that would be sufficiently durable to hold a body conforming pad to a specific body part, such as the hands, fingers, feet and toes of a person, while at the same time being sufficiently resistant to sweat that could otherwise cause the adhesive to sufficiently lose its adhering or bonding properties and result in the pad being dislodged from a wearer's body due to engagement with an external surface, such as the ground or a sporting article like a golf club or baseball bat for example.
3. During the time I was working with 3M Company, 3M Company provided me with several experimental adhesive tapes. Through this evaluation process, I determined that only one combination of tapes worked successfully for the purposes above-mentioned. This combination of tapes included:
  - a. A water-resistant, breathable, skin compatible tape identified by 3M Company as MSX 5527; and
  - b. A high-strength acrylic adhesive transfer tape identified by 3M Company as using an acrylic adhesive known as 300LSE.
4. Upon receiving the present office action from the United States Patent and Trademark Office, dated May 31, 2005, I contacted 3M Company and requested that they provide me with any available technical data sheets that describe the above-mentioned adhesive transfer tapes. Copies of the data sheets provided by 3M Company are attached hereto and incorporated herein and are identified as follows:
  - c. A copy of a Product Clinical Data Summary Sheet for the MSX 5527 (1-Page).
  - d. A copy of a Preliminary Technical Information Sheet for the MSX 5527 (2-Pages).
  - e. A copy of a Technical Data for a 3M Company transfer tape with adhesive 300LSE (4 Pages).
  - f. A copy of Typical Physical Properties and Performance Characteristics of the 3M Adhesive Transfer Tapes with Adhesive 300LSE (5 pages).
5. With reference to my invention, I specifically discovered that two layers of adhesive transfer tape were required to meet my specific purposes. A first

layer (the adhesive transfer tape with the 300 LSE adhesive disposed on both of its surfaces) for bonding to the above-mentioned pad and to the second layer (the MSX 5527 transfer tape). The second layer of MSX 5527 transfer tape has adhesive on its primary surface, which is covered with a peel sheet until it is removed so the skin compatible adhesive on its primary surface may engage and bond to a selected skin surface. The opposite side of the MSX 5527 transfer tape is adhesive free but is bonded to the first layer by its 300 LSE adhesive.

6. This two layer structure is more specifically described in the now pending patent application at paragraph [0028] and in FIG. 18, as follows:

- g. ...pad 10 includes a top surface 12 and bottom surface 13. As shown in FIG. 18, the several layers of a kit include the pad 10 made of ethylene vinyl acetate (EVA)...
- h. a two sided acrylic, pressure sensitive adhesive transfer tape 17 on the top surface 12,
- i. a layer of MSX 5527 acrylate adhesive 14...and
- j. a peel sheet 18 protecting the adhesive until ready to use."

I further declare under penalty of perjury pursuant to the laws of the United States of America that the foregoing is true and correct, and that this declaration was executed on October 13, 2005, at 8:00 AM.

  
\_\_\_\_\_  
Perriann M. Holden



# Adhesive Transfer Tapes with Adhesive 300LSE

9453LE • 9471LE • 9472LE

## Technical Data

September, 2002

### Product Description:

- 3M™ Adhesive 300LSE is a hi-strength acrylic adhesive that provides a very high bond strength to most surfaces.
- Excellent bond to low surface energy plastics, such as polypropylene and powder coatings.
- Excellent adhesion to lightly oiled surfaces typical of machine parts.
- Thickness range of 2.0 mils, 3.5 mils and 5.0 mils for use on smooth, rough and textured surfaces.
- Extremely smooth adhesive for excellent graphics appearance.
- Polycoated kraft liner for die-cutting end tabs and waste removed nameplates on a common carrier.

### Product Construction:

	Tape 9453LE	Tape 9471LE	Tape 9472LE
Adhesive: (Solvent Free)	3.6 mils (91 microns) 3M High-strength Acrylic Adhesive 300LSE	2.3 mils (58 microns) 3M High-strength Acrylic Adhesive 300LSE	5.2 mils (132 microns) 3M High-strength Acrylic Adhesive 300LSE
Liner:	4.2 mils (107 microns) 58# Polycoated kraft	4.2 mils (107 microns) 58# Polycoated kraft	4.2 mils (107 microns) 58# Polycoated kraft

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## 3M™ Adhesive Transfer Tapes with Adhesive 300LSE

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### Typical Physical Properties and Performance Characteristics:

#### Typical Adhesion Properties

**Note:** The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Peel Adhesion - ounces/inch (Newtons/100 mm) ASTM D3330, modified: 90° peel, 2 mil aluminum backing.

#### Typical Adhesion Chart

	3M™ Adhesive Transfer Tape	15 Minute Room Temperature		72 Hour Room Temperature	
		Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	9453LE	90	98	100	109
	9471LE	71	78	75	82
	9472LE	109	119	140	153
ABS	9453LE	80	88	113	124
	9471LE	70	77	79	86
	9472LE	102	112	128	140
Polypropylene	9453LE	89	97	103	113
	9471LE	69	75	74	81
	9472LE	115	126	136	149

The properties defined are based on the attachment of impervious faceplate materials (such as aluminum) to a stainless steel test surface.

**Bond Build-up:** The bond strength of 3M™ Adhesive 300LSE increased as a function of time and temperature, and has very high initial adhesion.

**Humidity Resistance:** High humidity has minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

**U.V. Resistance:** When properly applied, nameplates and decorative trim parts are not adversely affected by exposure.

**Water Resistance:** Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the high bond strength is maintained.

**Temperature Cycling Resistance:** High bond strength is maintained after cycling four times through:

- 4 hours at 158°F (70°C)
- 4 hours at -20°F (-29°C)
- 4 hours at 73°F (22°C)

**Chemical Resistance:** When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids and alkalis.

**Temperature Resistance:** Adhesive 300LSE is usable for short periods (minutes, hours) at room temperatures up to 300°F (148°C) and for intermittent longer periods of time (days, weeks) up to 200°F (93°C).

**Lower Service Temperature:** -40°F (-40°C).

## 3M™ Adhesive Transfer Tapes with Adhesive 300LSE

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Available Sizes:	Width and Length (subject to minimum order requirements):	
	Limitations:	1/2 in. to 63/64 in.: Maximum 180 yards 1 in. to 54 in.: Maximum 360 yards
	Minimum Slit Width:	1/2 in.
	Maximum Slit Width:	54 in.
	Normal Slitting Tolerance:	± 1/32 in.
	Core	3.0 in.

**Application Techniques:** For maximum bond strength, the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Carefully read and follow manufacturer's precautions and directions for use when using cleaning solvents.

Bond strength can also be improved with firm application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C), causing the adhesive to develop intimate contact with the bonding surface.

Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended for most pressure-sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

**General Information:**

- Plastic nameplates or graphic overlays for use on low surface energy plastics.
- Waste removed nameplates on a common sheet for ease of application.
- Attaching membrane switch assemblies to powder coated surfaces and low surface energy plastics.
- Graphic overlays with end tabs for easy liner removal.
- Graphic application to surfaces such as wood, fabric, plastic, where very high bond strength is required.
- Attaching identification material to lightly oily surfaces typical of machine parts.

**Application Ideas:**

**Processing:**

**Slitting and die-cutting:** This adhesive is very aggressive and may be difficult to convert depending on your application requirements. Chilling the adhesive between 35°F and 50°F will improve the processability. In addition, dies can be lubricated with Laminoleum evaporative stamping oil, which is available from Metal Lubricants Company (708-333-8900), or with Lubri-Blade 907 from Ceramic Technologies Inc. (800-258-8495). You may also refer to our Technical Bulletin on 300LSE converting. (70-0707-6205-2)

**Roll Laminating:** A combination of metal and rubber rollers with moderate pressure is recommended.

**Note:** Please refer to the Technical Bulletin on slitting. (70-0709-3905-6)

## 3M™ Adhesive Transfer Tapes with Adhesive 300LSE

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**Shelf Life:** Product retains its performance and properties for two years from date of manufacture if properly stored at room temperature conditions of 72°F (22°C) and 50% relative humidity. Storage in plastic bag is recommended

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**For Additional Information** To request additional product information or to arrange for sales assistance, call toll free 1-800-223-7427 or visit [www.3M.com/converter](http://www.3M.com/converter). Address correspondence to: 3M Engineered Adhesives Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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**Important Notice** 3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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**Limitation of Remedies and Liability** If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty, or strict liability.

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ISO 9003

This Engineered Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.



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# Adhesive Transfer Tapes with Adhesive 350

9442 • 9445 • 9482PC • 9485PC • 9485EK • 9675

## Technical Data

September, 2002

### Product Description

These 3M™ Adhesive Transfer Tapes with 3M™ Adhesive 350 are a modified acrylic adhesive ideal for very high-bond strength to many surfaces. They have excellent chemical resistance and bond strength even at elevated temperatures. These tapes are offered with a fiber reinforced adhesive which is important for roll stability in narrow widths. Tapes using adhesive 350 are designed for temperature exposure to 450°F (232°C) for short periods of time and up to 300°F (149°C) over long time frames. This adhesive is a good choice for applications which require adhesion to Low Surface Energy plastics, powder coatings and oily metals.

### Construction

Product Number	Adhesive Thickness (mils)	Liner material - thickness
9442	2.0 (.05 mm)	55# Densified Kraft - 3.2 mils thick
9445	5.0 (.127 mm)	55# Densified Kraft - 3.2 mils thick
9482PC	2.0 (.05 mm)	62# Polycoated Kraft - 4.2 mils thick
9485PC	5.0 (.127 mm)	62# Polycoated Kraft - 4.2 mils thick
9485EK	5.0 (.127 mm)	78# Extensible Polycoated Kraft - 5.7 mils thick
9675	5.0 (.127 mm)	83# Polycoated Kraft lay flat - 6.2 mils thick

**Note:** These thicknesses are nominal values calculated from the adhesive areal density, the actual control value, used in manufacturing. Please note that temperature performance reflects liner off, completed bonds. The poly coated kraft liners melt at lower temperatures and silicone contamination may occur if exposed to high temperature with the liner attached.



## 3M™ Adhesive Transfer Tapes with Adhesive 350

9442 • 9445 • 9482PC • 9485PC • 9485EK • 9675

### Typical Physical Properties and Performance Characteristics

**Note:** The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

#### Peel Adhesion:

ASTM D-3330 (modified)

(180 degree peel, 72°F [22°C]) (72 hr. dwell)

Product Number	9442, 9482PC		9445, 9485PC, 9485EK, 9675	
	Oz/in	(N/100 mm)	Oz/in	(N/100 mm)
Stainless Steel	80	(87)	150	(164)
Aluminum	50	(55)	95	(104)
Painted Metal	60	(65)	145	(158)
Glass	90	(98)	145	(158)
Polycarbonate	65	(71)	145	(158)
Acrylic	60	(65)	125	(136)
Epoxy	65	(71)	120	(131)
ABS	65	(71)	85	(93)
Rigid PVC	50	(55)	90	(98)
Polypropylene	60	(65)	80	(87)
L.D. Polyethylene	35	(38)	40	(44)
H.D. Polyethylene	30	(33)	35	(38)

#### Adhesive Static Shear:

Static Shear Adhesion (ASTM D3654)

Typical values for adhesive 350 tapes on stainless steel (1 x 1 inch test sample)

Temperature	Load	Minutes to Failure
72°F (22°C)	1,000 gms	(No failures – test discontinued after 10,000 min.)
158°F (70°C)	500 gms	
200°F (93°C)	400 gms	
250°F (121°C)	300 gms	
300°F (149°C)	300 gms	
350°F (177°C)	300 gms	
450°F (232°C)	200 gms	

### Typical Liner Release Values

**Note:** Liner release values may vary from lot to lot. Values stated are only typical or average values based on lots tested.

9442	55 gms/inch
9445	55 gms/inch
9482PC	40 gms/inch
9485PC	44 gms/inch
9485EK	37 gms/inch

## 3M™ Adhesive Transfer Tapes with Adhesive 350

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### Environmental Performance

The properties defined are based on the attachment of impervious faceplate materials (such as aluminum) to an aluminum test surface.

**Bond Build-up:** The bond strength of 3M™ Adhesive 350 increases as a function of time and temperature.

**Humidity Resistance:** High humidity has a minimal effect on adhesive performance. Bond strengths are generally higher after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

**U.V. Resistance:** When properly applied, nameplates and decorative trim parts are not adversely affected by outdoor exposure.

**Water Resistance:** Immersion in water has no appreciable effect on the bond strength. After 100 hours in room temperature water the bond actually shows an increase in strength.

**Temperature Cycling Resistance:** Bond strength generally increases after cycling four times through:

- 4 hours at 158°F (70°C)
- 4 hours at -20°F (-29°C)
- 16 hours at room temperature

**Chemical Resistance:** When properly applied, nameplate and decorate trim parts will hold securely after exposure to numerous chemicals including gasoline, oil, Freon™ TF, sodium chloride solution, mild acids and alkalis.

**Heat Resistance:** The Adhesive 350 is usable for short periods (minutes, hours) at temperatures up to 350°F (177°C) and for intermittent longer periods (days, weeks) up to 250°F (121°C).

**Low Temperature Service:** -40°F (-40°C). Parts should be tested for low temperature shock service.

**Shelf Life:** Product retains its performance and properties for two year from date of manufacture if properly stored at room temperature conditions of 72°F (22°C) and 50% R.H. Storage in a plastic bag is recommended.

### Available Sizes

**Core Size:** The above tapes are offered on a 3.0 inch (76.2 mm) paper core.

<b>Minimum widths and lengths:</b>	1/8 in. to 3/8 in.	-	60 yds. (54.9 m) long
	3/8 in. to 1/2 in.	-	180 yds. (165 m)
	1/2 in. to 1 in.	-	360 yds. (329 m)
	1 inch and wider	-	360 yds. (329 m)

**Maximum width:** 48 inches

**Normal slitting tolerance:** ± 1/32 in. (0.8 mm)

**Standard length:** 60 yards

(For other than standard sizes contact your 3M sales representative.)

## 3M™ Adhesive Transfer Tapes with Adhesive 350

9442 • 9445 • 9482PC • 9485PC • 9485EK • 9675

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### General Information

- Excellent bond to metal and high surface energy plastics.
- Outstanding temperature and chemical resistance.
- Two adhesive thicknesses: 2 mil for thin profile labels and 5 mil for rougher surfaces.
- Available on various liners for specialized processing:
  - 55# Densified Kraft for rotary die-cutting
  - 62# Polycoated Kraft for steel rule die-cutting
  - 83# Polycoated Kraft for lay flat applications
  - 78# Extensible Kraft for conformable applications

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### Application Techniques

For maximum bond strength the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Consult manufacturer's Material Safety Data Sheet for proper handling and storage instructions.

Bond strength can also be improved with firm application pressure and moderate heat (for metal surfaces only), from 100°F (38°C) to 130°F (54°C), causing the adhesive to develop intimate contact with the bonding surfaces.

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### Application Ideas

Ideal adhesive application temperature range is 70°F to 100°F (21°C to 38°C). Initial application to surfaces at temperatures below 50°F (10°C) is not recommended for most pressure sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is satisfactory. For more specific information, contact our toll free 3M sales assistance number at 1-800-362-3550.

2 mil thick tapes may generally be used for joining materials that are relatively smooth, thin and have low residual stress. For materials with a rough or textured surface, the thicker adhesive film of the 5 mil tapes would be more appropriate for evaluation.

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### Dispenser Selection

For assistance in helping you determine the best dispenser for your application, contact your local 3M sales representative, or the toll free 3M sales assistance number at 1-800-362-3550.

## 3M™ Adhesive Transfer Tapes with Adhesive 350

9442 • 9445 • 9482PC • 9485PC • 9485EK • 9675

### For Additional Information

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### Recognition/Certification

**MSDS:** 3M has not prepared a MSDS for these products which are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, these products should not present a health and safety hazard. However, use or processing of these products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

**TSCA:** These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

**UL:** Tapes 9442 and 9445 have been recognized by Underwriters Laboratories Inc. under Standard UL 969 Marking and Labeling in File MH26206.

Tapes 9482PC and 9485PC have been recognized by Underwriters Laboratories Inc. under Standard UL 746C Polymeric Adhesives Systems, Electrical Equipment Component in File MH17478.

If you require official recognition of any 350 adhesive under either UL 969 or UL 746C, please contact 3M-customer service at 1-800-362-3550.

For more information on the UL Certification, please visit the website at <http://www.3m.com/converter>, select UL Recognized Materials, and then select the specific product area.

### Important Notice

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### Limitation of Remedies and Liability

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